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17. ABSTRACT (MAX. 250 WORDS) The features of the phonoscope communications system are presented. The phonoscope is a combined small television camera and twenty-one-inch television receiver built into one portable instrument. The two-way audio and video communications system makes possible communication between individuals located at different schools, and between classes in different schools. Classes in different schools may have debates and discussions or the classes may join together to share learning experiences, interview resource persons, and compare work projects. The phonoscope communications systems can also be used to provide inservice education for teachers and to bring learning experiences to the classroom for the benefit of an individual student or for the whole class.

Phonoscope communications systems can solve such problems of educational television as the high cost of installation and operation of educational television facilities, the need to have trained technical personnel assist in the educational applications of television, the limitations of one-way communication in pacing a presentation, and the rigidity in scheduling the use of television facilities.

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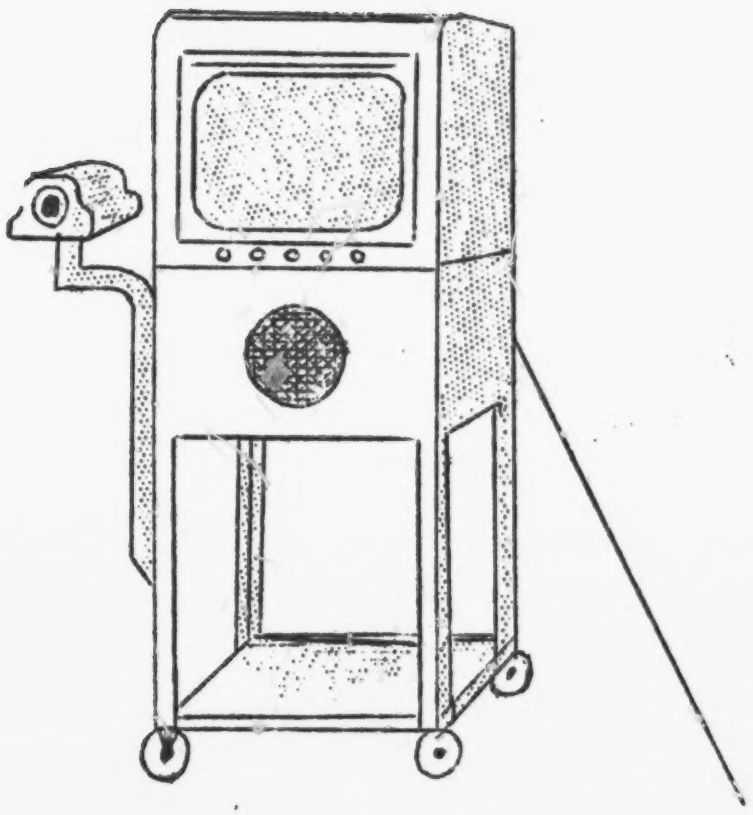
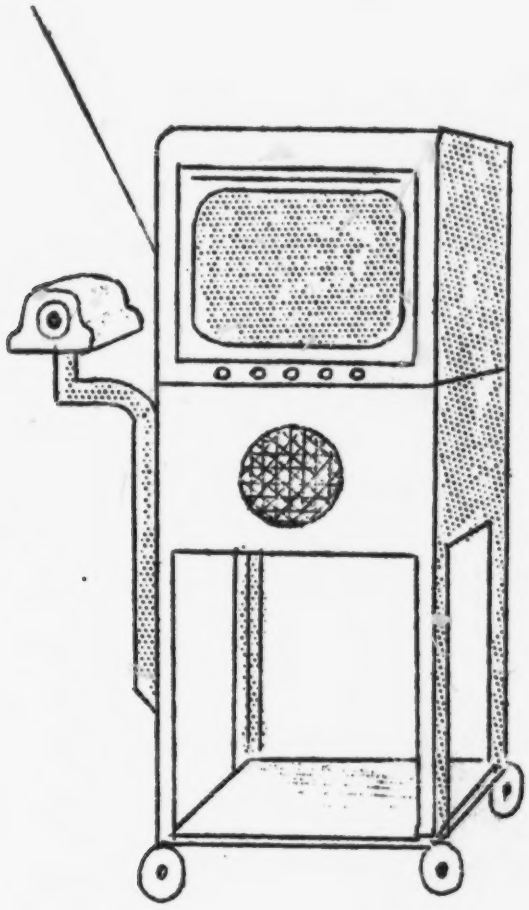


THE GALVESTON PHONOSCOPE EXPERIMENT



GALVESTON PUBLIC SCHOOLS
GALVESTON, TEXAS

Morgan E. Evans, Superintendent

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BACKGROUND INFORMATION

In March, 1959, Mr. Lee Cook, President of Phonoscope, Inc., called upon the Galveston Public Schools to determine whether the schools might be interested in a new form of television service, providing two-way audio and video communication between our schools. Mr. Cook explained that his organization was making application to the City of Galveston to become a public utility service, in order to provide this new form of communication service throughout the city, particularly for business, industry, and educational needs.

In May, 1959, the City of Galveston granted Phonoscope, Inc., of Galveston a fifty year franchise as a public utility service. The Board of Trustees of the Galveston Independent School District then reached an agreement with Phonoscope, Inc., stating their willingness to participate in a one-year experiment, utilizing this new form of television communication in the eight elementary schools, with Phonoscope providing a complete installation at no cost for the first year of operation. The Galveston Public Schools agreed to utilize the facilities extensively and evaluate the potentiality of this type television communication in education for the one year period. If found to be satisfactory and the expense justified, the system would continue to be used at the regular stipulated lease cost of $14,200.00 per year for the entire installation.

Installation of facilities and the building of Phonoscope equipment prototypes for use in the experiment have been completed, and this revolutionary communication system is in operation. It is expected that throughout the first experimental year changes and improvements will be made. Phonoscope, Inc., has agreed to adopt a "hands off" policy regarding methods of experimentation which the schools desire to use with the system. Maintenance of the entire installation will be the responsibility of Phonoscope, but evaluation of the effectiveness of the system will be left entirely to the schools.

FEATURES OF THE GALVESTON PHONOSCOPE COMMUNICATIONS SYSTEM

Phonoscope is the manufacturer's name for a combined small television camera and twenty-one inch television receiver built together into one portable instrument. The camera weighs only seven pounds, is 6½ inches wide, 6 inches high and 14 inches long. The television receiver screen provided for educational use is the standard twenty-one inch size. (The model used in business and industry will be smaller.)

The two-way audio and video communications system makes possible the communication between individuals located at different schools, and between classes in different schools. Debates and discussions may take place between classes in different schools, or they may join together to share learning experiences, interview resource persons, or compare work projects.

There are three ways the Galveston schools anticipate making best use of this new form of television communication.

(1.) It will be used for in-service educational activities with our teachers.

(2.) It will be used as a resource tool to bring learning experiences to the classroom for benefit of an individual student or for the whole class. Experiences which otherwise would not be available.

(3.) It will be used to improve staff communication. Conferences and meetings can be held among staff personnel located at several different schools with a minimum loss of time.

In time, perhaps experimentation may take place on a much wider base than the three areas mentioned above, but in the beginning stages of experimentation emphasis will be in these areas.

If an individual is making a presentation or demonstration to a class by means of Phonoscope, the fact that one can see and talk with the audience provides the feeling of actually being in the presence of the audience. One may hold discussions, ask questions, and more accurately determine the correctness of "the pacing of the presentation".

Science teacher, Mrs. Beverly Capers, talks with several teachers at Crockett School, (note Phonoscope on the right) following a 20 minute demonstration from 8:00 a.m. until 8:20 a.m. on the subject.... "The Bioscope And The World Of Plants".

This was one of five such demonstrations showing elementary teachers some of the many valuable ways in which the Bioscope may be used in teaching science in the elementary grades.

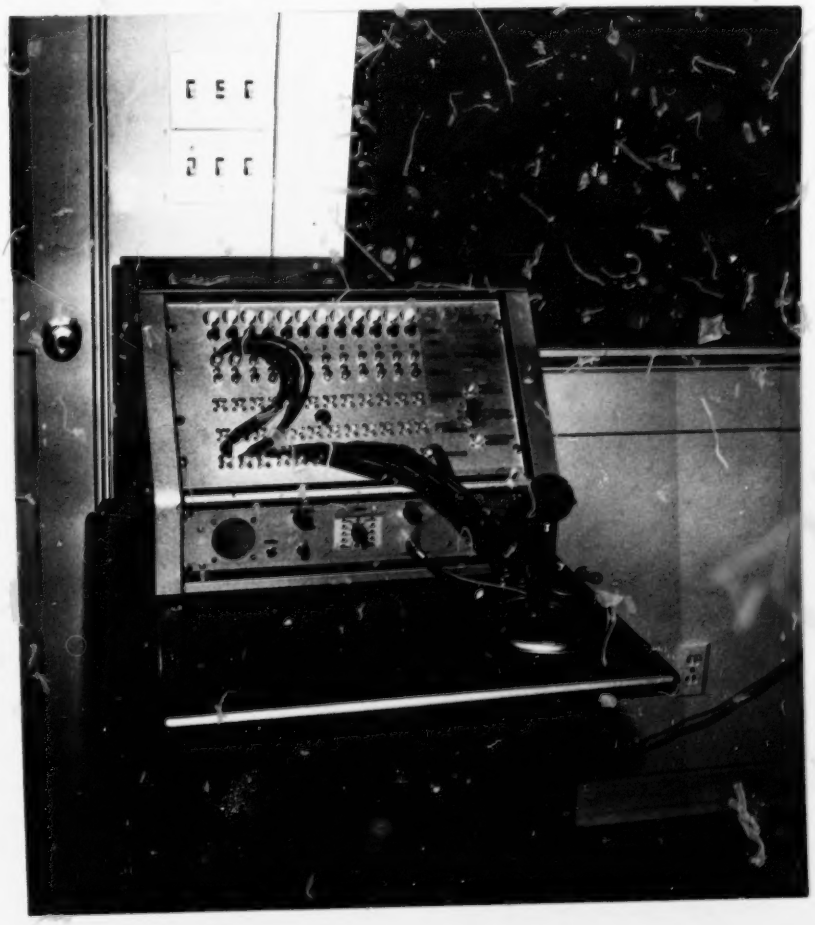
This is an example how short periods of time before school can be used effectively for in-service educational activities.
(The Phonoscope on the left is in the library of San Jacinto School.)Teachers there had just left the room to meet their classes. Two schools were involved each morning with 33 teachers participating on a voluntary basis.

A time exposure showing the teachers at Crockett School watching Mrs. Capers on the Phonoscope.

Conferences may be held between groups from any number of points where Phonoscopes are located. Each individual school has been connected by coaxial cable to a central switchboard located in the Administration Building of the Galveston Public Schools. An inexpensive studio is also provided in the Administration Building. The switchboard, serving as the nerve center of the entire operation, provides for conferences by allowing individuals or groups of persons located at the different Phonoscopes to converse in a network arrangement. All Phonoscopes connected in a conference arrangment will show the same picture at the same time, but the picture can easily be switched from one location to another. Thus, whoever is speaking at any given moment in a conference may be seen on the television screens by all persons participating in the conference. It is expected that Phonoscopes will offer unique opportunities for staff communications within the school organization.

Though Phonoscope can be used on a mass communication basis, even as other closed-circuit educational television facilities, it is unique in its adaptability for individual or class use.

The schools are only one part of the overall Phonoscope two-way television communication system. Business and industry will soon be making wide use of these facilities in the City of Galveston. A central city switchboard operation will serve as the hub for the system. The switchboard used in the school network of Phonoscopes, will be connected with the city Phonoscope switchboard, making possible two-way television communications not only within the school system, but also with any business or



A picture of the first Phonoscope switchboard ever made. This switchboard prototype is now in use in the Galveston experiment.

industry within the community utilizing Phonoscope service. Thus field trips by individual classes or smaller groups of students might be made by way of Phonoscope television facilities.

Four major problems have caused considerable concern in the development of educational television in this country. They are:

1. The high cost of installation and operation of educational television facilities.

2. The need to have trained technical personnel such as engineers, technicians and production specialist to assist in the educational applications of television.

3. The limitations of one-way communication create problems in pacing of a presentation, limiting interaction and is confined to special studios for production type presentations.

4. Rigidity of scheduling use of television facilities has been a major problem.

Phonoscope television communications systems may provide some of the answers to these problems, as operating as a public utility service Phonoscope, Inc. of Galveston will sell service rather than equipment. Thus, the installation of television facilities for schools would not require a large capital outlay from a single years budget, but simply a regular amount would be spent each year for the lease of the facilities. Phonoscopes will lease for $1,020.00 per year. The Galveston experiment is starting with twelve Phonoscopes and a switchboard. One hundred seventy classrooms have been wired for use of the Phonoscopes. The lease cost for this equipment, including maintenance of the complete installation will be $14,200.00 per year. As these facilities will not require hiring expensive engineers or technicians, the average school system could afford this type of service.

Because emphasis is upon "communication" between Phonoscopes, rather than productions originating from the central studio, classes of different schools may communicate with each other without use of the studio at the administration building. A portable Phonoscope makes every classroom a potential studio where informal communication may originate. Production specialist will not be needed.

Phonoscopes are related more to the "telephone", with video added, rather than to the "production" type educational television copied from commercial television.

As Phonoscopes may be used with many classes, or between just two classes, or two individuals, several different activities which are completely unrelated may take place at the same time through the Phonoscope switchboard. Phonoscope is seen as a valuable communications tool which may provide for the needs of individuals, a single class, or many classes at the same time, depending upon the goals and purposes desired. Thus a new flexibility is possible which has not been available in the past with educational television. In other forms of educational television, the larger the scope of its use, the more rigid the scheduling of its use becomes. With Phonoscopes it appears that just the opposite is true. The more Phonoscopes in use, the greater the flexibility of uses.

CONCLUSION

As experimentation develops in using the Phonoscope facilities, we are coming to the conclusion that we have an entirely new communications tool with which to work. We must not, therefore, simply follow the patterns developed thus far in utilizing television in education, but rather must pioneer a new pathway through yet undetermined potentialities. We can draw upon the lessons learned to date, but must look at this new tool with a completely new perspective.

We see Phonoscope television communication as an additional beneficial communications tool, meant to enrich learning. It should make possible an excellent means of carrying out many types of in-service educational activities, to help our teachers become better teachers, and in many ways become a valuable time saver. It will make possible improved staff communications.

We do not plan to teach course subjects by Phonoscopes, but plan to make extensive use of Phonoscopes to bring resources and experiences to class groups which would not otherwise be possible. We do not plan to have master teachers teaching subjects with the classroom teachers acting as assistants, but one teacher may act on occasions as a resource person and assist another classroom teacher desiring such assistance.

We do not anticipate changing our present pupils-per-teacher ratio. We hope to maintain as a guiding principle in our use of this new revolutionary communications tool, that nothing will be attempted by Phonoscope television which could be done as well or better by other means, thereby seeking to find ways of employing this facility for maximum beneficial utilization.